Earth Science Tutorials

Status and Update

- **Background**
- **Current Status**
- **Future Directions**

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Background

Working Group Membership

This effort was initiated at the Technology Strategy Team Meeting March 2-3, 2000 at Stennis Space Center, with the creation of an Earth Science Tutorials Working Group:

Jim Duda	Chair/IPO/GSFC
Frank Peri	LaRC
Chuck Monroe	HQ/YF
Glenn Prescott	HQ/YF
Gordon Johnston	H/YFQ
Gran Paules	HQ/YF
Jim Gatlin	GSFC
Rod Zieger	JPL

The Need for Earth Science Tutorials

Policy makers and budget managers within and outside of NASA need an easily accessible source of information that describes complex technical issues associated with the Enterprise. This includes

- the interrelationships among the science areas,
- the measurements
- the sensors that perform the measurements
- the technologies that enable better sensors and science.

Objective

- The objective of this effort is to develop a series of Web-based tutorials on Earth science topics.
- These tutorials will provide fundamental information about
  - Earth science measurements
  - Technologies supporting those measurements
  - Basic science behind the measurements and technology
  - Current (and planned?) remote sensing missions.

Current Status

- Identified many experts on technical content:
  - *Radar, Microwave, Lidar, Information Technology, etc.*

- Identified many existing tutorials and scores of related URLs of excellent quality:
  - *NASA HQ and Centers*
  - *USRA*
  - *Air Force*
  - *DoE*
  - *NOAA*

- Developed a draft Web framework to illustrate the concept
- Held a strategy session at HQ with team members and local experts on how to proceed

ES Tutorials Strategy Meeting

- Meeting was held on 7 August at HQ
- Participants:

Gran Paules (HQ/YF)
Jack Kaye (HQ/YS)
Gordon Johnston (HQ/YF)
Chuck Monroe (HQ/YF)
Glenn Prescott (HQ/YF)
Ming Ying Wei (HQ/YO)
Nora Normandy (HQ/YO)
Frank Peri (LaRC)
Blanche Meason (GSFC)
Jim Gatlin (GSFC)

Questions Discussed at the 7 Aug Meeting

- What is the correct approach?

There are several alternatives we might consider:

- Create a bibliography of URLs pointing to existing tutorials and technical articles. (Low cost and complexity)
- Create a compendium of brief technical articles containing an overview at the appropriate level, and pointers to more technical background.
- Develop a set of tutorials that are consistent in technical content and style. (High cost and complexity)

- What resources for technical content are available?
  - Are there sources of content or target audiences for this content that we have not considered?

- What is the appropriate presentation level for the tutorials?

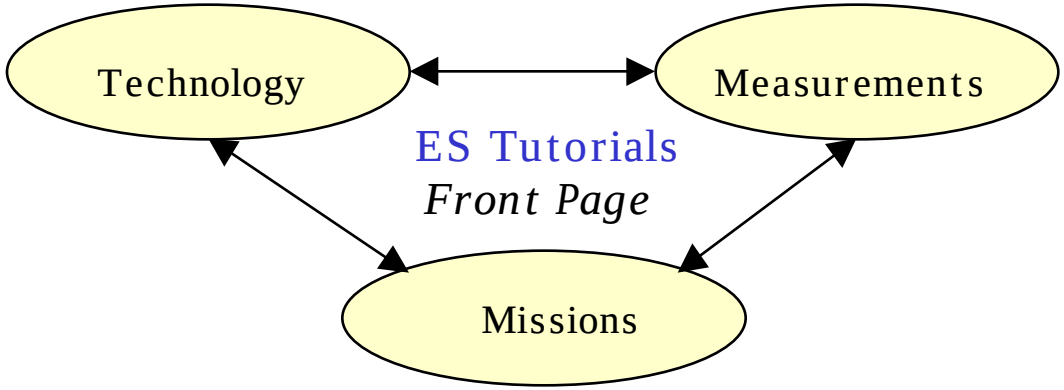
  • Assume that the typical user will be an educated adult, having a college degree and some familiarity with scientific principles and an understanding of mathematics through algebra.

  • Writing style will be aimed at the “Reader's Digest” approach, using straightforward word descriptions supplemented by appropriate graphics and images.

  • Mathematical expressions will only be used when essential to convey important principles

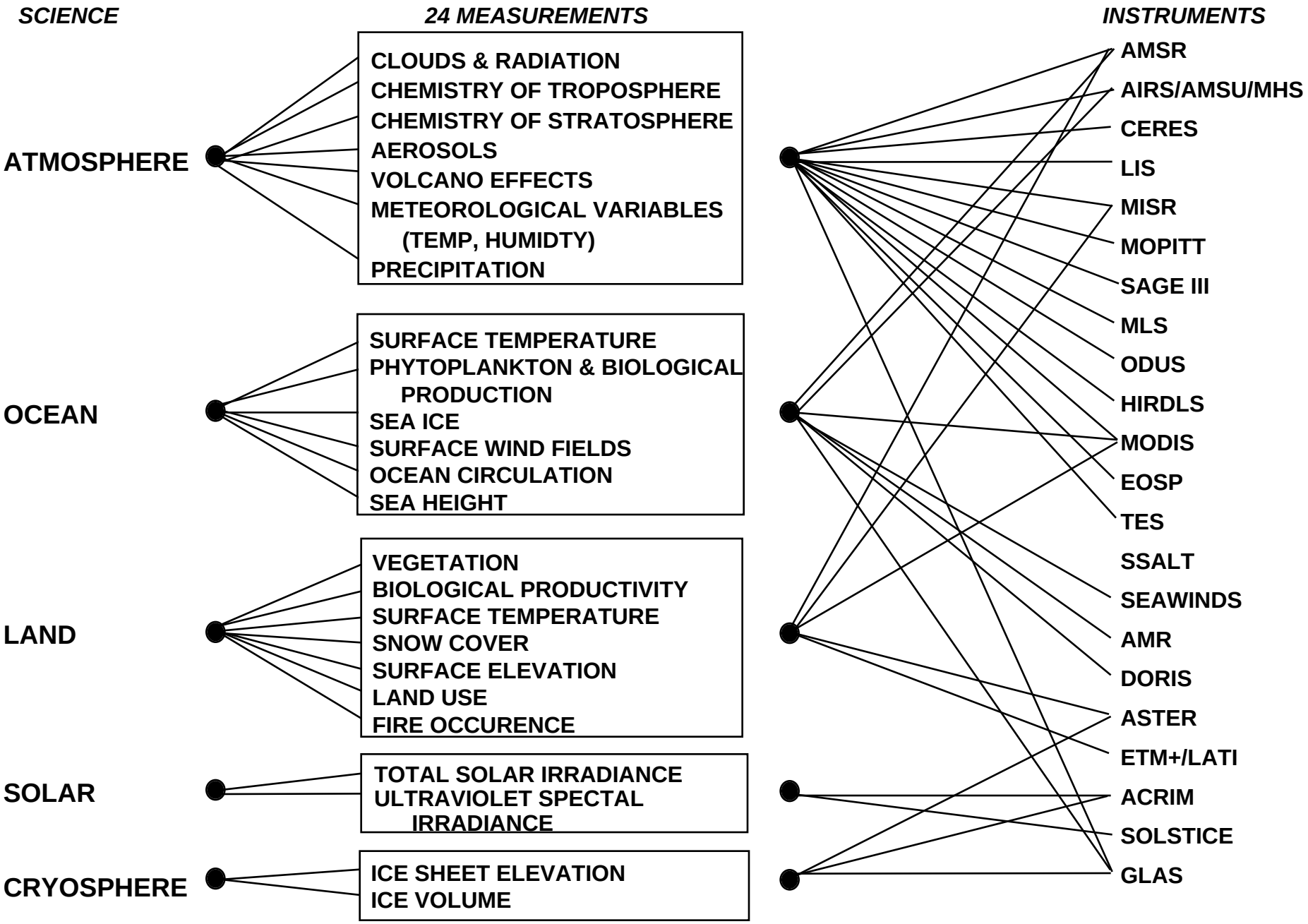
· What is the appropriate Web-based structure?

As an initial strategy we will develop three parallel tutorial "trees", as shown below. HTML links will allow the user to move among the tutorials and will tie together measurements, technologies and missions in a consistent and comprehensive manner, eliminating the need to repeat content.

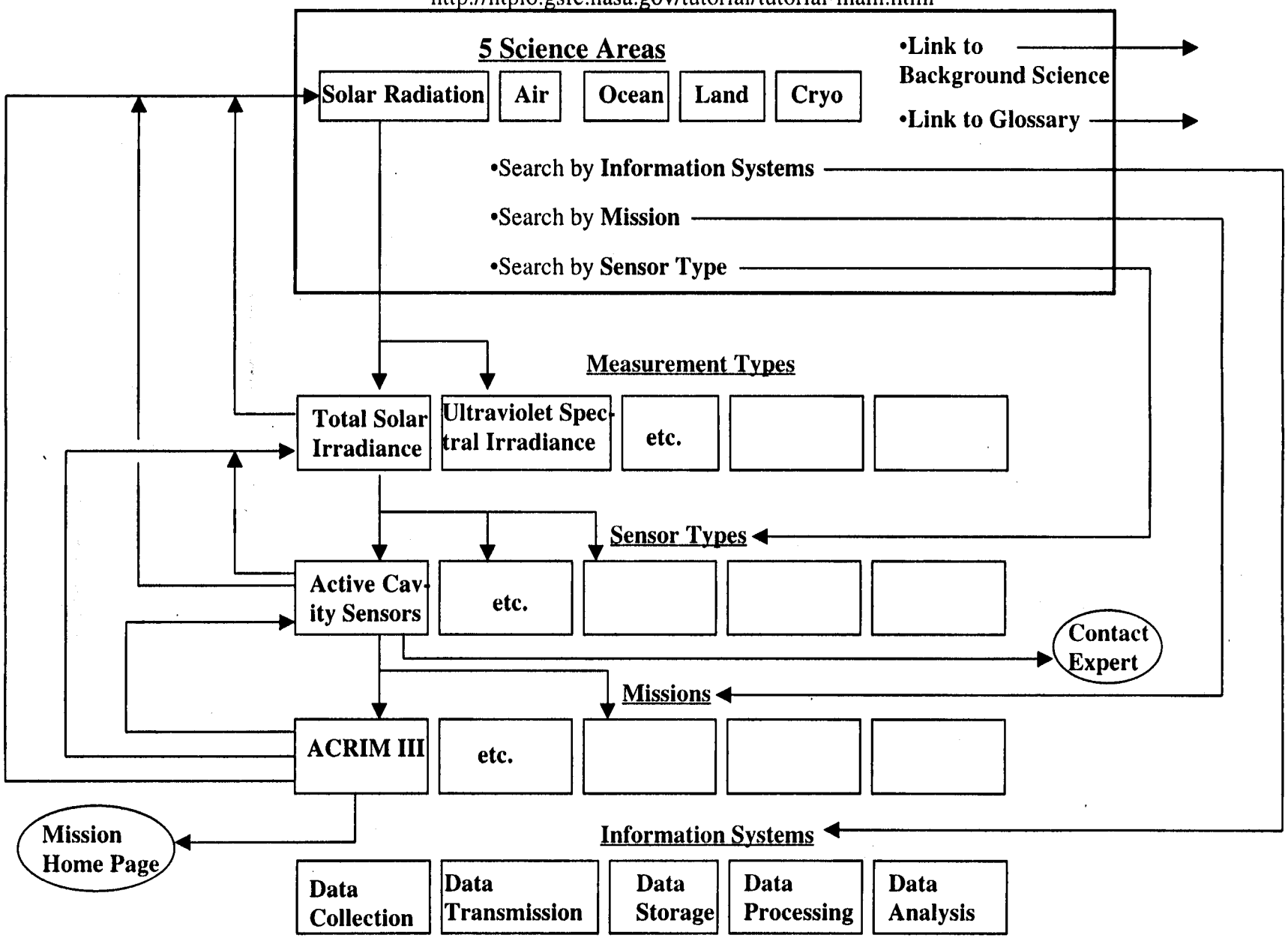


Our task would be to synthesize only the highest level tutorials and provide links to material that is more technical and out of the scope of our target audience.

EOS Measurements Map To Instruments



http://ntpio.gsfc.nasa.gov/tutorial/tutorial-main.html



- What level of effort and resources are required?

  • The final product will depend on the resources available to complete this task.

  • If we simply want a bibliography of Web pages, then our job is nearly completed. However,
    - Tutorials available on the Web are consistent in quality & level.
    - Not all of the important topics are available on-line.

  • Writing tutorials or developing a compendium of technical articles will require the following
    - Content providers who can write at the appropriate level.
    - Web designers to tie all parts of the tutorial together
    - System administrators to maintain the links
    - Funds to pay for the above services

Future Directions

- The compendium approach will be used
  - need a new name - “tutorial” is not appropriate
  - links to missions and other program data
  - technical content imported and made consistent
- The best sources for technical content are the web, and tutorial books and articles.
  - Technical experts are not appropriate sources
- The web-based structure is being developed with the help of HQ/Y web designers.
- Resources available from YO and YF
  - Be careful...this can be an extremely expensive undertaking